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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,845	01/23/2001	Mon Nan Ho	2011001	1488

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Keith Kline
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EXAMINER

THAI, LUAN C

ART UNIT PAPER NUMBER

2827

DATE MAILED: 01/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/768,845

Applicant(s)

HO ET AL.

Examiner

Luan Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **6-11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim **6**, lines 8-9, the phrase "mounting the substrate having a plurality of bonding pads of the first surface of the substrate and within the concavity of the first surface of the substrate" is unclear as how the substrate can be mounted within the concavity of itself.

Claims **7-11** are rejected since each includes the limitations of independent claim

6.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Chou (6,262,479).

Regarding claims 1-4, Chou discloses (see figures 1-6) a packaging structure of an image sensor, comprising: a substrate including a plurality of metal sheets 222, glue of plastic materials 200 (e.g., BT, FR 4, FR 5, etc) for sealing the metal sheets 222, a first surface of the substrate having a periphery, and a second surface opposite to the first surface, the metal sheets being exposed to the outside via the first surface and the second surface to form first contacts 220 and second contacts, respectively, a projecting edge 240 being provided on the periphery of the first surface of the substrate to form a concavity above the substrate; an image sensing chip 20 mounted on the substrate and within the concavity. Although Chou does not explicitly teach plurality of bonding pads being formed on the chip surface, this feature is taken to be inherent in chip 20 since the means of electrically connecting the chip to the first contacts 220 on the first surface of the substrate via bonding wires 250 is disclosed and it is apparent that some type of bonding pads must be present on the chip surface for the bonding wires 250 bonded to. As a result, the electrical signals from the image sensing chip are capable of being transmitted to the second contacts of the second surface of the substrate. Chou further discloses a transparent layer 260 arranged on the projecting edge 240 on the first surface of the substrate. The claimed feature of "the image sensing chip being capable of receiving the

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optical signals” is taken to be inherent in Chou’s image sensing chip 20 since receiving optical signals is a characteristic of the image sensing device.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 and 6, 8-11, insofar as in compliance with 35 USC 112, is rejected under 35 U.S.C. 103(a) as being unpatentable over Chou (6,262,479).

Regarding claim 5, Chou discloses all the limitations of the claimed invention as detailed above except for the transparent being a piece of transparent glass. Glass is a well known material in semiconductor art, specifically in optical art, for making a transparent. It would have been obvious to a person having skill in the art at the time the invention was made to use the transparent glass in Chou’s device, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 6 and 8-11, it should be noted that although claims 6 and 8-11 are “method claims”, the method steps consist of the broad steps of

"preparing...., mounting...., connecting.....etc"; therefore, these steps would be inherently satisfied by the device package of Chou as modified.

6. Claims 1-5 and 6, 8-11, insofar as in compliance with 35 USC 112, is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka (5,436,492).

Regarding claims 1-5, Yamanaka (figures 1-22, specifically see figures 1 and 20) discloses a packaging structure of an image sensor, comprising: a substrate 3-61 including a plurality of metal sheets 61, glue 3 of epoxy material for sealing the metal sheets, a first surface of the substrate having a periphery, and a second surface opposite to the first surface, the metal sheets being exposed to the outside via the first surface and the second surface to form first contacts 61a and second contacts 62, respectively; an image sensing chip 2 mounted on the substrate. Although Yamanaka does not explicitly teach plurality of bonding pads being formed on the chip, this feature is taken to be inherent in chip 2 since the means of electrically connecting the chip to the first contacts 61a on the first surface of the substrate via bonding wires 7 is disclosed and it is apparent that some type of bonding pads must be present on the chip for the bonding wires 7 bonded to; thus, the electrical signals from the image sensing chip are capable of being transmitted to the second contacts of the second surface of the substrate. Yamanaka further discloses a transparent glass 4 arranged on the first surface of the substrate. The claimed feature of "the image sensing chip being capable of receiving the optical signals" is taken to be

inherent in Yamanaka's image sensing chip 20 since receiving optical signals is a characteristic of the image sensing device.

Yamanaka's embodiment of figure 20 fails to teach the a projecting edge being provided on the first surface of the substrate and the transparent arranged on the projecting edge (Yamanaka teaches the projecting edge and the transparent are combined in one single structure). However, the structure of the transparent arranged on the projecting edge which is provided on the substrate is conventional as disclosed in Yamanaka's figure 1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamanaka 's device of figure 20 by using the conventional structure of transparent arranging on the projecting edge in order to reduce the amount of transparent material.

Regarding claim 6 and 8-11, it should be noted that although claims 6 and 8-11 are "method claims", the method steps consist of the broad steps of "preparing...., mounting...., connecting.....etc"; therefore, these steps would be inherently satisfied by the device package of Yamanaka as modified.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is (703) 308-1211. The examiner can normally be reached on 7:00 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Tolbott can be reached on (703) 308-2947. The fax phone numbers


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for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Luan Thai
January 26, 2002


DAVID L. TALBOTT
PRIMARY EXAMINER
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